Imagery analysis report

Possible Liquid Hydrogen Production Plant Identified at Zagorsk Rocket Engine Test Facility Krasnozavodsk, USSR (S)

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POSSIBLE LIQUID HYDROGEN PRODUCTION PLANT IDENTIFIED AT ZAGORSK ROCKET ENGINE TEST FACILITY KRASNOZAVODSK, USSR (S)

1. (TSR) A new possible liquid hydrogen production plant, 1 nautical mile (nm) west of the central test area of Zagorsk Rocket Engine Test Facility (RETF) Krasnozavodsk (USSR, was identified in the late stage of construction when last observed on This facility (Figure 1) has been under construction since September 1972. Completion of the plant may indicate the beginning of a series production acceptance test program for upper-stage liquid hydrogen rocket engines to be used on one or more new Soviet space launch vehicles. 25X1 25X1

2. (TSR) The main feature of the installation is a large possible hydrogen production building consisting of six sections. A linear administration/engineering section connects three large high-bay sections on the east to two additional sections (one high bay and one low bay) on the west. Although three rail spurs under construction appear to serve one of the high-bay sections, only one of the spurs will probably be extended into the building. No other sections or sides of the building can be directly served by rail. This lack of rail service to the interior of the building significantly reduces the probability of an assembly/checkout function or structural/environmental test function for the building. Rather, the building will possibly house the main production elements of a liquid hydrogen plant using the electrolysis method of hydrogen production.

3. (TSR) Compared to the preexisting liquid hydrogen production plant at the central test area of Zagorsk RETF and other suspected Soviet industrial-scale liquid hydrogen production plants using electrolysis, the newly identified possible liquid hydrogen production plant at Zagorsk has all of the features that would be expected at its present stage of construction. However, this plant will have a much greater production capacity than any known Soviet hydrogen production plant.

4. (TSR) In addition to the possible hydrogen production building, the possible liquid hydrogen plant already contains the following facilities essential to the production of liquid hydrogen from water: two large bunkered water reservoirs, a very large electrical substation, a large gas holder, a large induced-draft cooling tower, a large spherical cryogen storage tank, and multiple rail spurs for the loading and transporting of cryogens. There is also evidence that all production sections of the building will have substantial amounts of roof and/or exterior wall ventilation. At this stage of construction, it is too early to identify flare stacks, cryogen loading points, lightning arresters, or cryogen railcars.

5. (TSR) A large, cylindrical, cryogen storage tank, small numbers of which are being produced at Kuybyshev Aerospace Production Plant 1 (has also been identified at the possible liquid hydrogen production plant. The tank is in diameter and is heavily ribbed. Approximately nine of the tanks will probably be installed on the roof of the highest section of the possible hydrogen production building. 25X1 25X1

6. (TSR) The spherical cryogen storage tank at the possible hydrogen production plant is identical to tanks currently being installed at Tyuratam Launch Site Y Foundations for additional spherical tanks have been identified at Tyuratam Space Launch Site W (and Tyuratam Space Launch Site J 1/2 where new space launch vehicles are expected to use liquid hydrogen and liquid oxygen propellants in at least some of their stages. This would be the first use by the Soviets of liquid hydrogen as a fuel in an operational space launch vehicle. 25X1 25X1 25X1

7. (TSR) It is likely that the development of an upper-stage liquid hydrogen/oxygen rocket engine has been successful at Zagorsk RETF. The identification of a new, much larger, possible liquid hydrogen production plant at Zagorsk may be an indication of an impending series production acceptance test program for upper-stage liquid hydrogen engines to be used on space launch vehicles at the new Tyuratam launch sites.

REFERENCES

IMAGERY

(TSR) All relevant KEYHOLE imagery acquired between was used in the preparation of this report. 25X1 25X1

(S) Comments and queries regarding this report are welcome. They may be directed to Soviet Strategic Forces Division, Imagery Exploitation Group, NPIC, 25X1 25X1

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